

C U R R I C U L U M V I T A E

JOHN CHARLES EAMES

20 Lockhart Ave
CASTLE HILL NSW 2154

Telephone: (02) 9634 7858 (Private)
Telephone: (02) 9659 3001 (Business)
Facsimile: (02) 9659 0033 (Business)
Mobile: 0408 916 246
E-mail: johnenames@lqms.com.au

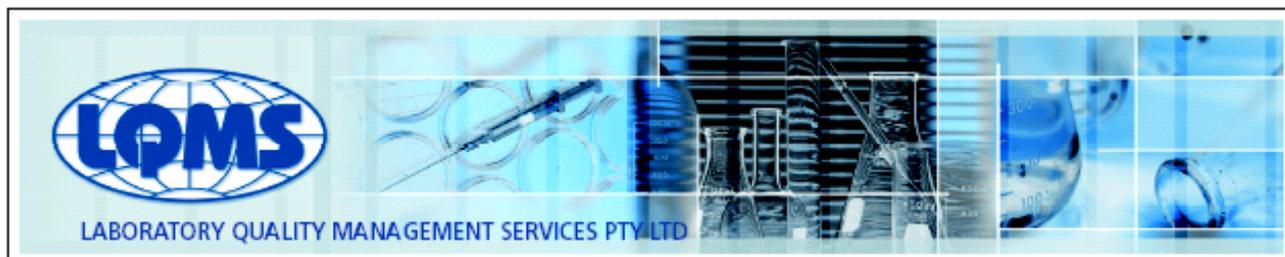
Date of Birth: 21st May 1952
Citizenship: Australian

EDUCATIONAL QUALIFICATIONS:

B.Sc. (Hons) Pure and Applied Chemistry University of New South Wales	1978
Prizes: RACI Analytical Chemistry	1976
George Wright Environmental Chemistry	1976

CONTINUING EDUCATION:

Sydney College of TAFE Occupational Health & Safety Workplace Committees	1988
Macquarie University Applied Statistics (STAT 270)	1994
Applied Probability (STAT 273)	1994
Medical Statistics	1993
CSIRO Project Leaders Course	1994
NATA Auditor/Lead Auditor Training Course Certificated by the International Register of Certificated Auditors	1999



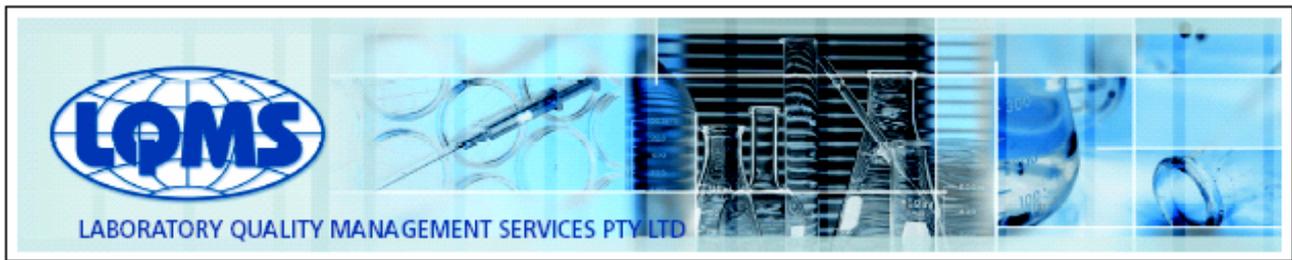
EMPLOYMENT SUMMARY:

1999-Present	Consultant	Laboratory Quality Management Services P/L
1997-1999	Chief Chemist	Analabs Pty Ltd / Aust. Environmental Laboratories
1992-1997	Principal Experimental Scientist	CSIRO
1994-1997	Minesite Rehabilitation Research Program (MRRP) within Division of Coal and Energy Technology	
1992-1994	CSIRO Exploration and Mining	
1991-1992	Lecturer ICP-AES short courses	Sydney Technical College (TAFE)
1973-1997	CSIRO	
1988-1992	Senior Experimental Scientist	Division of Exploration Geoscience
1977-1988	Experimental Scientist	Division of Mineralogy
1976-1977	Technical Officer	Division of Process Technology
1973-1976	Technical Assistant	Division of Mineral Chemistry
1970-1973	Cadet Chemist	Geochemical & Mineralogical Laboratories

Group Leader Analytical Techniques Group 1977-1992
CSIRO Division of Mineralogy / Exploration Geoscience

Responsibilities:

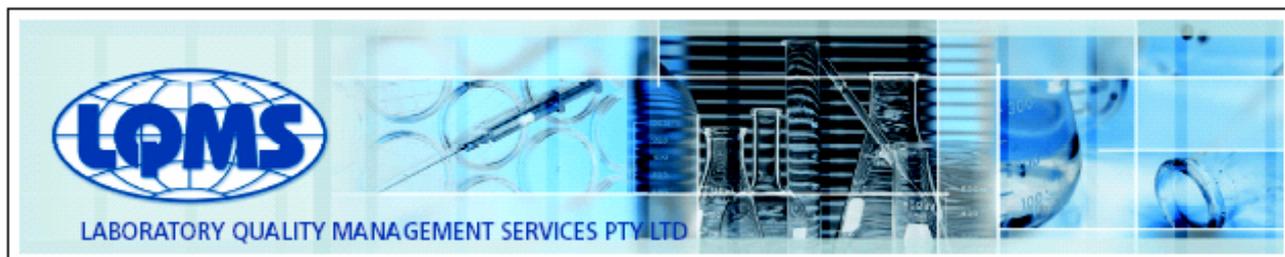
- Group to meet responsibilities, as detailed below:
 - Carry out high quality major, minor, trace and ultra trace analysis of rocks, ores, minerals and groundwaters
 - Conduct method development on new techniques and non-routine procedures appropriate to difficult samples
 - Consult to industry, educational institutions and government bodies
 - Operate flame and hydride AAS as well as GFAAS
 - Operate ICP-AES, ICP-MS, XRF and XRD spectrometers
 - Carry out conventional and non-routine gravimetric and titrimetric analysis as well as operate LECO C and S analysers
- Appoint, train, supervise and develop staff
- Initiate and plan group research and development projects
- Budget and demonstrate need to purchase equipment



CONSULTING EXPERIENCE:

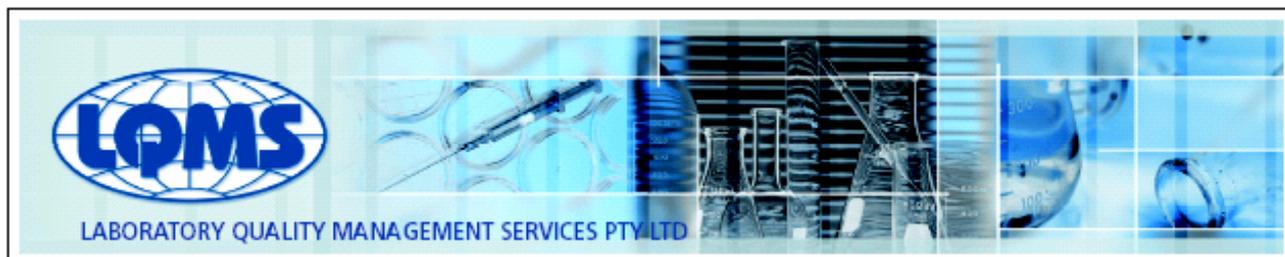
Due to my extensive analytical experience and reputation, I have provided consulting services to industry, universities and other government bodies, these include:

- Advanced Analytical Australia Pty Ltd
- AGAL
- Alligator Rivers Region Research Institute
- AMDEL Limited
- Analabs Pty Ltd
- APD Snack Food Pty Ltd
- Austdac Pty Ltd
- Australian National University
- Australian Wine Research Institute
- Australian Laboratory Services Pty Ltd
- Baxter Healthcare
- BHP
- Browns Creek Gold Mine
- Centaur Nickel P/L – Cawse Nickel Operation
- CSIRO, Division of Applied Physics
- CSIRO, Division of Building, Construction and Engineering
- CSIRO, Division of Coal and Energy Technology
- CSIRO, Division of Food Research
- CSIRO, Division of Forest Research
- CSIRO, Division of Soils
- CSIRO, Division of Textile Physics
- CSIRO, Division of Wheat Research
- Department of Defense, Garden Island Dockyard Laboratory
- Geomin Research
- GM Laboratories
- Gosford City Council
- IMP-Analabs – Namibia
- Incitec Pivot Limited
- McGlynn & Partners – Solicitors
- National Building and Technology Centre
- NEI John Thompson (Australia)
- Northern Territory Environmental Laboratory (NTEL)
- NSW Department of Agriculture
- Ok Tedi Mining Limited – Papua New Guinea
- Porgera Joint Venture Limited – Papua New Guinea
- PT Freeport - Indonesia
- Roorkee University, India, Department of Geology
- SGS (Australia) Pty Ltd
- Stockdale Prospecting Ltd
- Sydney University, Department of Archaeology
- TAFE, Sydney Technical College
- Tectronics
- Townsville Port Authority
- University of Hawaii, Geology Department
- UNSW, School of Food Technology
- UNSW, School of Chemistry
- WMC



OTHER RELEVANT EXPERIENCE:

- A. Awarded the 2003 President's Award from the NSW Branch of the RACI for services to the NSW Branch, particularly the Analytical Chemistry Group of the RACI
- B. Appointed in 2000 technical adviser NATA Proficiency Testing Program – Special Gold Project
- C. Appointed in 1999 assessor of Forensic Science Honours Theses, University of Technology, Sydney
- D. Elected in 1999 a Member Australasian Institute of Mining & Metallurgy (AustlMM)
- E. Appointed in 1998, NATA signatory for Australian Environmental Laboratories in the area of Inorganic Chemistry.
- F. Appointed in 1997 technical adviser for the third NATA Geochemical Samples Proficiency Testing Program.
- G. Elected in 1997 a Fellow of the Royal Australian Chemical Institute (RACI).
- H. Appointed in 1996 technical adviser for the second NATA Geochemical Samples Proficiency Testing Program.
- I. Registered company **Laboratory Quality Management Services Pty Ltd** and undertook consulting work including writing Laboratory Quality Manuals and Work Instructions for companies seeking NATA accreditation. Conducted quality system and technical audits.
- J. Appointed in 1994 technical adviser for the first NATA Geochemical Samples Proficiency Testing Program.
- K. Appointed in 1990 to the NATA Inorganic Technical Committee, a position I still hold.
- L. Appointed in 1987 to the TAFE Review Panel to examine proposed cluster courses:
 - i. Certificate in Laboratory Skills
 - ii. Advanced Certificate of Applied Science
 - iii. Associate Diploma of Applied Science
- L. Appointed in 1986 as an Expert to the National Standards Commission in Metrology Skills and continue to serve in this capacity.
- M. Appointed in 1986 as a NATA assessor in Chemical Testing and continue in that role.
- N. Served in 1985-1987 as Secretary of the Organising Committee for the 9th Australian Symposium on Analytical Chemistry.
- O. Served as Secretary of the RACI Analytical Chemistry Division from 1985 to 1987.
- P. Member of the RACI Analytical Division Standing Committee 1983-1987.
- Q. Secretary NSW RACI Analytical Chemistry Group 1983-1986.
- R. Committee member NSW RACI Analytical Chemistry Group from 1979 to the present.



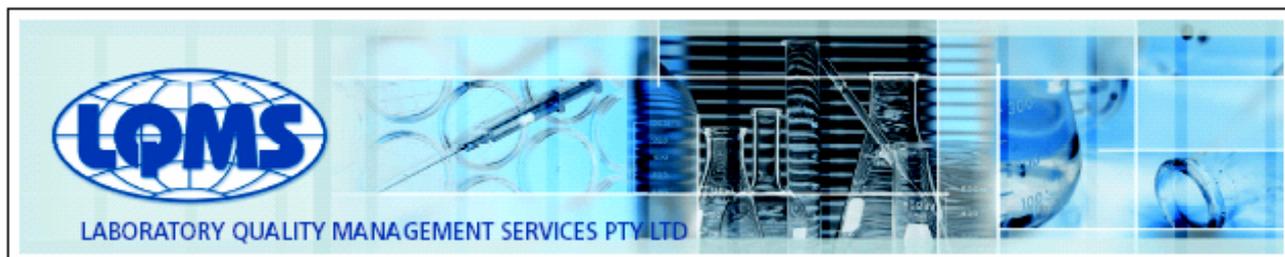
PROFESSIONAL ACTIVITIES:

- A. Invited Speaker at Reference Materials and your Laboratory, *The Use of Reference Materials in the Laboratory*, NATA, Sydney, November 2001.
- B. Invited Speaker at RACI NSW Analytical Chemistry Group Annual General Meeting, *Remote Chemistry*, 25 September 2001.
- C. Invited Speaker at the 6th Australasian Symposium, Applied ICP Mass Spectrometry, *NATA's Requirements for Accreditation of ICP-MS Techniques*, Canberra, December 2000.
- D. Invited Speaker at Reference Materials and your Laboratory, *Integrating Reference Materials into your Laboratory's Quality System*, NATA, Sydney, November 1999.
- E. Invited Speaker at Good Project – Wrong Assays! Getting Sample Preparation and Assaying Right, *Unrealistic Expectation of Assay Results*, MICA/AIG/AustIMM, Sydney, July 1999.
- F. Invited Speaker at the 5th Australasian Symposium, Applied ICP Mass Spectrometry, Perth, November 1998.
- G. Invited Speaker at "Best Practice in Mineral Exploration." *Quality Control of Collected and Process Information*, International Communication for Management Conference, Sydney 1998.
- H. RACI NSW Analytical Chemistry Group Committee
Organised and convened numerous seminars and symposiums including:
- | | | |
|-------|--|------|
| i. | "hitchhiker's guide to quality assurance – The Sequel", Two day symposium | 2004 |
| ii. | "the hitchhiker's guide to quality assurance", One day symposium | 2003 |
| iii. | "ICP-MS – Now and in the Future" One day symposium | 1998 |
| iv. | "Environmental and Geochemical Applications of ICP-MS"
One-day seminar, 2 overseas and 2 local speakers | 1994 |
| v. | "Lead and Aluminium in the Environment:
Chemistry and Toxicology", One-day symposium | 1993 |
| vi. | "Furnace AAS, the Latest Developments and What Lies Ahead?"
One-day symposium, 2 overseas speakers | 1992 |
| vii. | "ICP - A Source for the '90's" Three-day symposium | 1991 |
| viii. | 9 th Australian Symposium on Analytical Chemistry, Sydney
Five-day symposium with 1,100 registrants | 1987 |
| ix. | "ICP-MS" lecture by Dr. D. Douglas, Sciex, Canada | 1986 |
| x. | "Computers and Laboratory Automation", One-day short course
Prof. Raymond Dessy (Virginia Polytechnic and State University) | 1986 |
| xi. | "Problems Associated with Acid Rain"
Lecture by Prof. James Robinson (Louisiana State University). | 1983 |
| xii. | "Furnace AAS - Alive and Well", Half day seminar | 1982 |
| xiii. | "Inductively Coupled Plasma Spectrometry"
One-day symposium, 4 overseas speakers | 1980 |
- I. NATA Assessor - appointed by the National Association of Testing Authorities Registration Advisory Committee in the Chemical Testing area to examine and evaluate laboratories management, operational and technical expertise. Laboratories in Australia, Taiwan, South Korea and Indonesia have been assessed.
- J. 1991 CSIRO Occupational Health and Safety Representative. Completed Comcare accredited course 1992.
- K. Convenor of workshop at 7th Australian Geological Convention in Sydney 1984, entitled "Chemical Analysis for the Mineral Exploration and Processing Industries".
- L. Invited lecturer at "ICP - Developments and Applications" Bausch and Lomb, Sydney, 1983



CAREER HIGHLIGHTS:

- Development of methods for trace and ultratrace analysis using ICP-AES and ICP-MS techniques. Design problems associated with the CSIRO ICP-AES, one of the first purchased in Australia, were overcome and the technique developed to provide state-of-the-art analytical data. *These significant research achievements include:*
 - A. Development of new software package for ICP spectrometers. In a collaborative project with Labtam International this software package was designed in late 1985 and was continuously developed until early 1987, when offered commercially to ICP users for approximately \$15,000
 - B. Designed and built new self-aligning demountable plasma torch. This torch overcame the problems some commercially available torches had with sensitivity changes due to poor alignment of glass components and those problems encountered with high matrix loading.
 - C. Instrument design modifications developed at CSIRO North Ryde were incorporated into Labtam International spectrometers.
- Development of analytical techniques using ICP-MS on a variety of sample types including rocks, ores, minerals, groundwaters, seafloor sediments and wines. A method for the determination of rare earth elements in geological materials by isotope dilution ICP-MS was also developed.
- Establishing shipboard analytical procedures, and providing timely high quality data, analysing seawater for methane at ppb levels - 1993 cruise of the RV Franklin in the Manus Basin off Papua New Guinea.
- Managing the day-to-day operation of research projects within the Water Quality Group of the Division of Coal and Energy Technology. These included projects for the following companies:
 - BHPAC
 - Energy Resources of Australia (ERA) - Ranger Mine
 - Renison Limited
 - Queensland Department of Minerals and Energy - Mt. Morgan Mine
 - Clarence Colliery
 - Northparkes Mine
 - ARCO Coal Australia Inc
- Problem solving technical and client quality issues and preparing commercially sensitive reports for Analabs Pty Ltd in all areas of the analytical consulting business, both nationally and internationally. Increasing productivity in trace metal analysis by both improving existing methodologies and introducing new technologies while additionally achieving NATA accreditation.
- Successfully consulted to industry through the company Laboratory Quality Management Services Pty Ltd. Developed quality management systems for laboratories to meet accreditation (ISO/IEC Guide 25, ISO/IEC17025: 1999) and certification protocols (ISO9001:2000). Complete preparation of required documentation:
 - Laboratory Quality Manual
 - Methods Manuals
 - Field Sampling Manual
 - Work Instructions
 - Equipment Calibration and Maintenance Manual
 - Proformas and Worksheets
 - Instrument Logbooks
 - Staff Training Matrix
 - Suitable record-keeping system



CAREER HIGHLIGHTS:

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- Laboratory staff was given the necessary skills through tailored training courses run on-site.
- As Managing Director of Laboratory Quality Management Services Pty Ltd I conducted numerous laboratory audits, both nationally and internationally for compliance to quality management systems and additionally examined laboratories technical excellence. Mediated in disputes between commercial analytical laboratories and mining companies.
- Conducted desktop feasibility studies for laboratories, including research of market potential.
- Wrote a commercial training package for Australian National Training Authority (ANTA) entitled "Maintain Quality System and Continuous Improvement Processes within Work/Functional Area". This package will be used by Registered Training Organisations (RTO) for delivery of quality system training in both AS ISO/IEC 17025:1999 accreditation and ISO9000: 2000 certification.

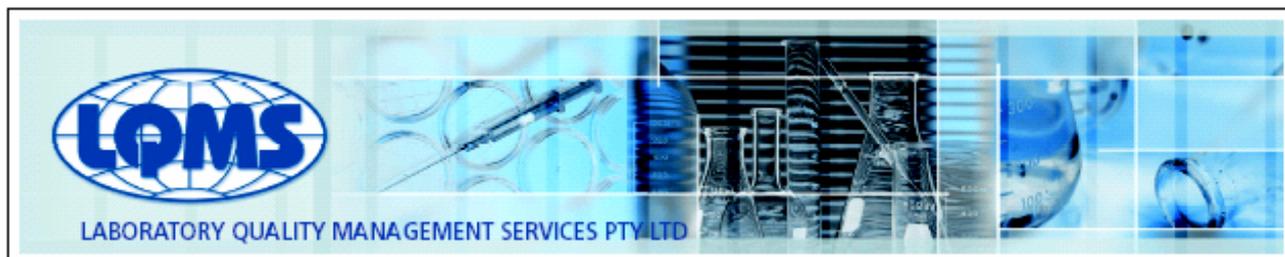
PUBLICATIONS:

Book Publications

1. Ellerbroek, D.A., Jones, D.R., Townley, L. and **Eames, J.C.**, 1997, *Hydrology and Geochemistry of Load Spoils and Final Voids*, in "Subsurface Hydrological Responses to Load Cover and Land Use Changes" Ed. M Taniguchi, Kluwer Academic, Boston, pp260
2. the hitchhiker's guide to quality assurance, ISBN 0-909758-12-3, Ed. Maree-Ann Stuart & **John Eames**, RACI, Sydney, May 2003

Journal Publications

1. Cosstick, R.J., **Eames, J.C.** and Nancarrow, P.C., Analysis of Reduced Iron Ore Pellets for Forms of Iron. "3rd Australian Conference on Science and Technology", Canberra, ACT, May 1978. Abstracts" pp74-78.
2. **Eames, J.C.**, Inductively Coupled Plasma Spectrometry. Chem. Aust., 1980, 528-529
3. **Eames, J.C.** and Matousek, J.P., Determination of Silver in Silicate Rocks by Furnace Atomic Absorption Spectrometry. Anal Chem., 1980, 52, 1248-1251.
4. Rixon, K., Botz, R. and **Eames, J.C.**, The Relationship between Coal Microfractures and Pyrite Oxidation in Outburst Coal from the Bowen Seam, Collinsville, Australia. Coal J., May 1984, 55-58.
5. Binns, R.A. and **Eames, J.C.**, Geochemistry of Wallrocks at the Clunes Deposit, Victoria. In "Bicentennial Gold 88", Melbourne, 16-20 May 1988. Geol.Soc.Aust.Abstr.Ser., 1988, 23, 419-421.
6. Binns, R.A. and **Eames, J.C.**, Geochemistry of Wallrock Alteration at the Temora Gold Deposit, New South Wales. In "Bicentennial Gold 88", Melbourne, 16-20 May 1988, Geol, Soc. Aust. Abstr. Ser., 1988, 23, 422-424.
7. Binns, R.A. and **Eames, J.C.**, Geochemistry of Wallrocks at the Clunes Gold Deposit, Victoria. Econ. Geol., 1989, Monograph 6, 302-311.
8. Lee, T.H., Gulson, B.L., **Eames, J.C.** and Stockely, C.G., The Lead Content of Australian Wines, Aust. NZ Wine Ind. J., Nov 1991, 257-261.
9. **Eames J.C.**, O'Keefe, C.J., and Dotter, L.E., A Practical Design for an ICP Demountable Plasma Torch, Appl. Spectrosc., 46(11), 1992.
10. **Eames J.C.**, and Cosstick, R.J., Determination of Forms of Sulphur in Coals and Related Materials by Eschka Digestion and Inductively Coupled Plasma Atomic Emission Spectrometry, Analyst, 117, 1992.



PUBLICATIONS:

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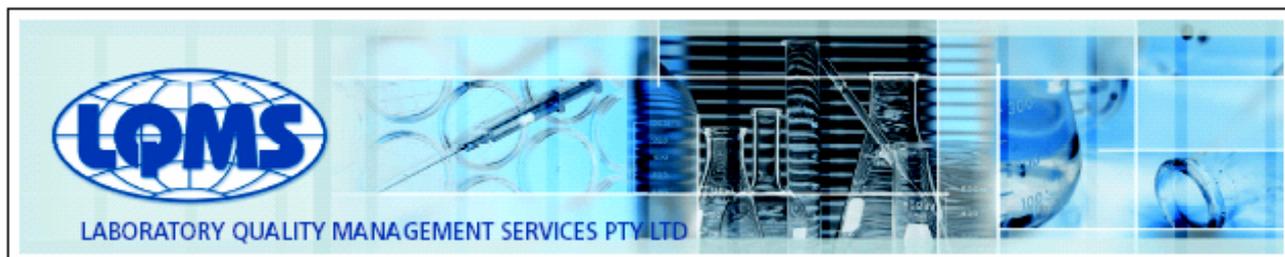
11. **Eames, J.** Unrealistic expectations of assay results, GOOD PROJECT - WRONG ASSAYS Getting Sample Preparation and Assaying Right – The Australian Institute of Geoscientists BULLETIN 27, 1999
12. **Eames, J.C.**, Integrating Reference Materials into your Laboratory's Quality System, NATA News, 93, December 1999.
13. Gulson, B.L., **Eames, J.C.** and Davis J., Evaluation of Exhibits from a Murder Case using the Lead Isotope Method and Scanning Electron Microscopy, Journal of Forensic Sciences, 47 (5), 2002, 1015-1021.

CSIRO Restricted Investigation Reports

1. **Eames, J.C.**, Evaluation of the International Organisation of Standardisation's Proposal for Ash Analysis, 150/TC 27-Wg 13 (SEC-18). June 1978. 9p.
2. **Eames, J.C.**, and Dotter, L.E., ICP-AES Analysis of Copper Alloy Archaeological Metalwork, October 1985, 9p.
3. **Eames, J.C.**, Determination of Trace and Ultratrace Elements in Australian Wines by ICP-MS. June 1991, 22p.
4. **Eames, J.C.**, Determination of Rare Earth Elements in Ten Seafloor Samples by Inductively Coupled Mass Spectrometry, March 1992, 16p.
5. Gulson, B.L., Akber, R.A., Mizon, K.J., Korsch, M.J., Carr, G.R. and **Eames, J.C.**, Lead Isotope Results for Waters and Particulates as Seepage Indicators Around the Ranger Uranium Tailings Dam - A Comparison with the 1984 Results, July 1992, 40p.
6. Whitford, D.J., **Eames, J.C.**, and Craven, S.J., Report to the Department of Mines and Energy, South Australia, Geochemistry of Some Mafic and Ultramafic Rocks from the Gawler Craton. August 1992, 7p.
7. Jones, D.R. and **Eames, J.C.**, Preliminary Assessment of Water and Sediment Quality, Clarence Colliery, Final Report CET/IR 440R, January 1996, 12p.
8. Jones, D.R. and **Eames, J.C.**, Water Quality in Final Voids, Rust PPK, Report CET/IR517R - Volume I, November 1996. 121p.
9. Jones, D.R. and **Eames, J.C.**, Water Quality in Final Voids, Rust PPK, Report CET/IR517R - Volume II, November 1996, 74p.
10. **Eames, J.C.**, Jones, D.R. and Steinberg K. Assessment of the Ameliorative Requirements of Gordonstone Co-Disposal Material, ARCO Coal Australia Inc., Report CET/IR517R, December 1996, 16p.
11. Jones, D.R., Ellerbroek, D., **Eames, J.C.**, Smith, M., Agnew, M, Wright, M. and Nefidovas, A., Closeout Options for Tailing Dams at Renison Bell, Final Report Stage I, Report CET/IR544R, March 1997, 210p.
12. Jones, D.R. and **Eames, J.C.**, Remobilisation of Solutes from Wetland Sediments, ERA Environmental Services, Report DET/IR562R, April 1997, 46p.

Conference Presentations

1. **Eames, J.C.** and Matousek, J.P., Factors Affecting Direct Determination of Silver in Silicate Rocks by Furnace Atomic Absorption Spectrometry. 5th Australian Symposium on Analytical Chemistry, Perth, 1979.



PUBLICATIONS:

(Cont.)

2. Cosstick, R.J., **Eames, J.C.** and Nancarrow, P.C., A Method of Analysing Sponge Iron for Forms of Iron, 5th Australian Symposium on Analytical Chemistry, Perth, 1979.
3. **Eames, J.C.**, ICP or AAS? ICP, Development and Applications. Bausch and Lomb, Sydney, 1983.
4. **Eames, J.C.**, Plasma Analysis Through the Looking Glass - A Review. 7th Australian Geological Convention, Sydney, 1984.
5. **Eames, J.C.**, O'Keefe, C.J. and Dotter, L.E., A Practical Design for and ICP-AES Demountable Plasma Torch, Chemistry International, Brisbane, 1989.
6. **Eames, J.C.**, Craven, S.J. and Whitford, D.J., The Determination of Rare Earth Elements in Geological Materials by Isotope Dilution ICP-MS. 11th Australian Symposium on Analytical Chemistry, Hobart, 1991.
7. **Eames, J.C.**, The Determination of Trace and Ultratrace Elements in Geological Materials by ICP-MS. RACI Conference "Plasma a Source for the '90s", Sydney, 1991.
8. **Eames, J.C.**, Quality Control of Collected and Process Information "Best Practice in Mineral Exploration." International Communication for Management Conference, Sydney 1998.
9. **Eames, J.C.** and Liddy H., *NATA Requirements for ICP-MS Accreditation*, 5th Australian Symposium, Applied ICP Mass Spectrometry, Perth, November 1998.
10. **Eames, J.C.**, Unrealistic Expectation of Assay Results, Good Project – Wrong Assays! Getting Sample Preparation and Assaying Right, MICA/AIG/AustIMM, Sydney, July 1999.
11. **Eames, J.C.**, Reference Materials and your Laboratory, *Integrating Reference Materials into your Laboratory's Quality System*, NATA, Sydney, November 1999.
12. **Eames, J.C.** and Stuart, M., *NATA Requirements for Accreditation of ICP-MS Techniques*, 6th Australian Symposium, Applied ICP Mass Spectrometry, Canberra, December 2000
13. **Eames, J.C.**, Reference Materials and your Laboratory, *The Use of Reference Materials in the Laboratory*, NATA, Sydney, November 2001.

AUDITS:

Laboratories audited for their technical competence, many of these laboratories have been audited several times:

ADI Limited (Garden Island)

Advanced Analytical Australia Pty Ltd

AGAL (Australian Government Analytical Laboratory –Melbourne)

AGAL (Australian Government Analytical Laboratory – Sydney)

Agriculture Victoria State Chemistry Laboratory

AGRITECH Laboratory Services Pty Ltd

ALS (Australian Laboratory Services Pty Ltd – Brisbane Minerals Laboratory)

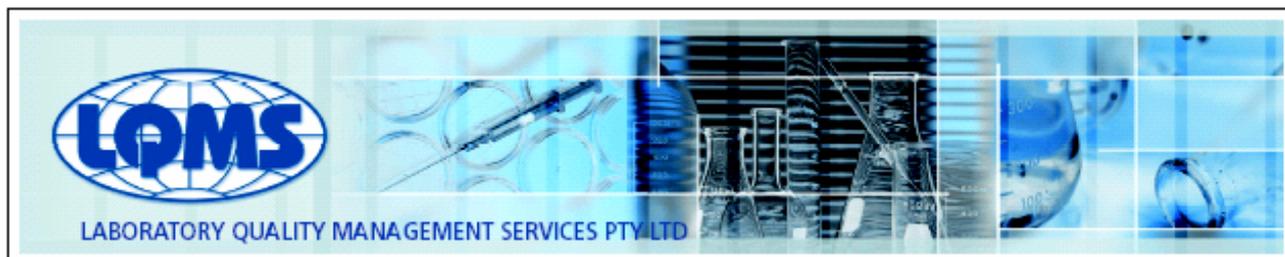
ALS (Australian Laboratory Services Pty Ltd – Brisbane Environmental Laboratory)

ALS (Australian Laboratory Services Pty Ltd – Sydney Environmental Laboratory)

ALS (Australian Laboratory Services Pty Ltd – Sydney Wear Check Laboratory)

ALS (Australian Laboratory Services Pty Ltd – Melbourne Environmental Laboratory)

Amdel Limited (Adelaide Mineral Laboratory)



AUDITS:

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Amdel Limited (Melbourne Environmental Laboratory)
 Amdel Limited (Sydney Environmental Laboratory)
 Amdel Limited (Orange Mineral Laboratory)
 Analabs (Perth)
 Analabs (Townsville)
 ANSTO (Australian Nuclear Science & Technology Organisation)
 Assaycorp Pty Ltd
 AEL (Australian Environmental Laboratories - Brisbane)
 AEL (Australian Environmental Laboratories - Sydney)
 Austdac Pty Limited
 Australian Water Quality Centre
 AWT (Australian Water Technologies)
 BHP Central Research Laboratory
 BHP Environmental Health Laboratory
 BHP Steel, Flat Products Division Laboratory Services
 Chemistry Centre (WA)
 Chemnorth Pty Ltd
 Copper Refineries Pty Ltd
 CSIRO Centre for Advanced Analytical Chemistry
 Department of Natural Resources – Resource Science Centre
 Enviromet Operations Pty Ltd
 Fox Laboratories
 Genalysis Laboratory Services Pty Ltd
 GM Laboratories Pty Ltd
 Gosford City Council – Kincumber Laboratory
 Government Chemical Laboratory (Queensland)
 HydroMet Corporation Ltd
 Incitec Pivot Laboratory - Werribee
 Industrial Technology Research Institute - Material Research Laboratory, Hsinch, Taiwan
 Ok Tedi Mining Limited – Environmental Laboratory (PNG)
 Ok Tedi Mining Limited – Mill Laboratory (PNG)
 Pasminco (Cockle Creek Smelter)
 Pasminco (Port Pirie)
 Porgera Joint Venture (PNG)
 Port Kembla Copper Limited
 PT. Freeport Indonesia Company
 Queensland Department of Primary Industries – Animal Research Institute
 Queensland Health Scientific Services
 NTEL – Northern Territory Environmental Laboratory
 NSW Agriculture, Biological & Chemical Research Institute
 NSW Department of Mineral Resources
 NSW Division of Analytical Laboratories
 SA State Chemistry Laboratory
 SGS Korea Co Ltd, Seoul, South Korea
 Tomago Aluminium Company Pty Ltd
 Warman International Ltd
 Water Ecoscience Pty Ltd
 Wyeth Australia Pty Limited
 WMC